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Series II.

Number III.

BULLETIN  
OF THE  
University of Notre Dame  
NOTRE DAME, INDIANA



COLLEGE OF ARCHITECTURE

PUBLISHED QUARTERLY AT NOTRE DAME

THE UNIVERSITY PRESS  
JANUARY, 1907

Entered at the Postoffice, Notre Dame, Indiana, as second class matter, July 17, 1905.

## **DIRECTORY OF THE UNIVERSITY**

**The FACULTY**—Address:

**THE UNIVERSITY OF NOTRE DAME  
NOTRE DAME, INDIANA.**

**The STUDENTS**—Address;

As for the Faculty, except that the name of the  
HALL in which the student lives should be added.

A Postoffice, a Telegraph Office, a Long Distance  
Telephone, and an Express Office are at the University.

The University is two miles from the city of South  
Bend, Indiana, and about eighty miles east of Chicago.  
The Lake Shore and Michigan Southern, the Grand  
Trunk, the Vandalia, the Indiana, Illinois & Iowa, the  
Chicago and Indiana Southern, and the Michigan Central  
railways run directly into South Bend.

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Law.

JOHN WORDEN, B. S.,  
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WILLIAM B. KELLEY,  
Shopwork.

## UNIVERSITY OF NOTRE DAME.

The University of Notre Dame was founded in the year 1842, by the Very Reverend Edward Sorin, the Superior General of the Congregation of Holy Cross. In an act approved January 15, 1844, the Legislature of Indiana gave the University power to grant degrees. The beginning of this act is:

*"Be it enacted by the General Assembly of the State of Indiana,* that Edward Frederick Sorin, Francis Lewis Cointet, Theophilus Jerome Marivault, Francis Gouesse and their associates and successors in office, be, and are hereby constituted and declared to be, a body corporate and politic, by the name and style of the 'University of Notre Dame du Lac,' and by that name shall have perpetual succession' with full power and authority to confer and grant, or cause to be conferred and granted such degrees and diplomas in the liberal arts and sciences, and in law and medicine, as are usually conferred and granted in other universities in the United States, provided, however, that no degree shall be conferred or diplomas granted, except to students who have acquired the same proficiency in the liberal arts and sciences, and in law and medicine, as is customary in other universities in the United States."

## UNIVERSITY BUILDINGS.

### THE ADMINISTRATION BUILDING

The dimensions of this building are 320 by 155 feet; it is five stories in height and is surmounted by a dome 207 feet in height. The executive offices, two study-halls, some dormitories and class rooms and the dining-rooms are in this building. The Library and the Bishops' Memorial Hall are also here temporarily. This building, like all the others of the University is lighted by electricity and gas, and heated by steam. The corridors of the first floor are decorated with mural paintings by Gregori.

### THE CHURCH.

The Church of the Sacred Heart is 275 by 120 feet in ground dimensions and 125 in height from the floor to the roof-ridge. The interior is decorated by Gregori, and the architecture is Gothic. There is a large crypt and many chapels. In the tower are a chime of 32 bells and the great six-ton chief bell.

### THE LIBRARY.

The Library contains 55,000 volumes of general literature. The departments of literary criticism, history, political science and the Greek and Latin classics are well represented. Special libraries containing reference works on technical subjects are provided in the Colleges of Engineering and Science. The College of Law has a complete library of its own. Ample reading room is provided in the main library. The best literary magazines and reviews, as well as the current numbers of scientific and technical journals are kept on file. Students have access to the Library from 8:00 a. m. to 9:00 p. m.

**SCIENCE HALL**

is situated a few steps south of Washington Hall. Its dimensions are 105 by 131 feet, and it is three stories in height. A large central space, the full height of the building, is occupied by a museum containing mineral, fossil, and biological specimens. The departments of Physics, Electrical Engineering, Civil Engineering, Philosophy, Botany and Biology have recitation rooms and laboratories in this building. The equipment for each of these departments is extensive and complete.

**ENGINEERING HALL**

This building is situated in the southern part of the grounds and is a large two story brick building, well lighted and heated. The lower floor contains the mechanical laboratory, machine shop, blacksmith shop and foundry. The second floor is given up to the wood shop and also contains a well lighted drawing room where students in designing may consult complete working drawings of the best steam engines and pumps to be found on the market.

**THE CHEMICAL LABORATORIES**

occupy a large three story building directly south of Science Hall. The entire first floor is devoted to advanced work and space is given to two large laboratories and lecture rooms. The second floor is occupied by the Department of Pharmacy, and contains a large well-equipped laboratory, a modern drug store, a lecture room and museum, a library for pharmaceutical publications, and a general stock room. The general Inorganic, Organic and Elementary Chemical laboratories are on the third floor. Each laboratory is provided with ample hood accommodations, and each desk is furnished with water, gas and suction.

**WASHINGTON HALL.**

This hall is 170 feet in length, 100 feet in width, and about 100 feet in height. It contains the rooms of the Department of Music, the reading rooms for Brownson and Carroll Halls, and the University Theater. The Theater is elaborately equipped with stage settings. It will seat 1,200 persons.

**SORIN HALL**

This building is 144 feet in length, with two wings 112 feet in depth. It has a basement and three high stories, and contains 101 private rooms for advanced students. These rooms are furnished, and students of Senior, Junior, or Sophomore standing in any of the Colleges are not required to pay rent. On the first floor there is a chapel, a law lecture room, and a law library. The building is lighted with electricity and heated with steam. In the basement are recreation rooms and bath rooms.

**CORBY HALL.**

Corby Hall is a second residence building. It has three stories and a basement, and it is 240 feet in width. There are 125 private rooms for students, with recreation rooms and chapel. The building is lighted with electricity and gas and heated with steam. For room-rent and care of the room a fee is charged.

**THE OBSERVATORY**

This building is located near the Chemical Laboratories and is designed for an equatorial telescope and for a transit or meridian circle. The equatorial telescope now in the building is intended for students of Astronomy, and is in use whenever favorable weather permits.

### THE INFIRMARY

This building, 200 feet by 45 feet in ground measurement and three stories in height, contains rooms for the use of students during illness. The sick are cared for by Sisters of Holy Cross, and the University physician visits them daily.

### THE GYMNASIUM

The Gymnasium which was burned down in November, 1900, was replaced by a building 230 by 200 feet in dimensions. The track-hall is now 100 by 180 feet on the ground: it is used for indoor meets, winter base ball practice, basketball and military drill. The gymnastic hall is 100 by 40 feet and is furnished with a full set of apparatus; below that are the offices, dressing-rooms and showerbaths. Friends of the University and the alumni contributed more than \$3,000 to the fund for re-building.

Cartier Field is an enclosed field for athletic games. There is a permanent grand stand near the baseball diamond and the cinder track and a portable stand near the football rectangle. The field contains ten acres of ground, and is a gift to the University from Mr. Warren A. Cartier, C. E., of the class of '87.

### OTHER BUILDINGS

There are numerous other large buildings connected with the University; of these the principal are: Saint Joseph's Hall, Holy Cross Hall, the Community House, the Presbytery, and Saint Edward's Hall.

## REGULATIONS GOVERNING ADMISSION TO THE COLLEGES

Candidates who wish to enter any of the Colleges must present evidence, either by examination or by a properly attested certificate, of ability to enter on the courses of the Freshman Year. The specific subjects required for entrance will be found later in this catalogue.

Examinations in all the subjects required for admission to the University are held at Notre Dame in September, at the beginning of the Fall Term.

A candidate failing to pass satisfactory examinations in one or more of the subjects required for admission to any College Program may, at the discretion of the Faculty, be admitted to his class conditioned, to make up his deficiency by extra study *within one school year*. Only when the conditions are removed will the student be admitted to full standing in his class.

Graduates of High Schools that are *fully accredited* to the State Universities, will be admitted without examination to the Freshman Year of any program to which their preparatory studies entitle them.

Certificates of work done in public or private High Schools will not be accepted instead of examinations, unless the applicant has passed the final examination after a full course in his school, and the Faculty of the University are satisfied with the standing of the school.

Candidates for admission to advanced standing who are required to take examinations must pass, *in addition* to the usual entrance examinations, an examination in the work already done by the classes they desire to enter. The additional subjects may be found in the programs of studies.

Applicants for advanced standing who present certificates from other colleges or universities may be received at the discretion of the Faculty with or without examination as regards particular cases.

No student will be admitted to any course of the Senior Year until all conditions have been cancelled.

Catholic students who are candidates for any degree are required to take the prescribed Courses in Evidences of Religion.

### DISCIPLINE

Official reports of each student's class standing will be sent to parents and guardians every two months.

The Faculty maintain that an education which gives little attention to the development of the moral part of a youth's character is pernicious, and that it is impossible to bring about this development where students are granted absolute relaxation from all Faculty government while outside the class-room. A young man must learn obedience to law by the actual practice of obedience, not merely by appeals to honor.

Moreover, the quiet and concentration of mind that are needed for collegiate work are not obtained except where discipline exists.

Therefore the following regulations, shown by experience to be salutary, are enforced at the University:

1. No student shall leave the University grounds without permission from the President or the person delegated to represent him.

2. *Leave of absence will not be granted to students during the term time, except in cases of urgent necessity. There is no vacation at Easter.*

3. Students are required to report at the University immediately after arriving at South Bend. This rule is binding not only at the beginning of the scholastic year,

but at all other times when leave of absence has been granted. Unnecessary delay in South Bend is looked upon as a serious violation of rule.

4. *Flagrant disobedience to authority, cheating in examinations, the use of intoxicating liquors, immorality, the use of profane and obscene language, and an unauthorized absence from the University limits* are among the causes for expulsion. In case of suspension or expulsion for such offences, *no fees shall be returned.*

5. No branch of study shall be taken up or discontinued without the consent of the Director of Studies.

6. Preparatory students are enrolled in Brownson, Carroll or St. Edward's Hall according to age: boys seventeen years of age or older are placed in Brownson Hall; those over thirteen and under seventeen, in Carroll Hall and those under thirteen, in St. Edward's Hall.

7. The use of tobacco is forbidden except to such students of Sorin, Corby and Brownson Halls as have received from their parents written permission to use tobacco.

8. Continued violation of regulations in Sorin or Corby Halls leads to forfeiture of rooms.

9. *Although students of all religious denominations are received, the University is nevertheless a strictly Catholic institution, and all students are required to attend divine service in the University Church at stated times.*

10. The use of intoxicating liquors is positively prohibited.

11. Undue attention to athletics at the expense of study will not be permitted, but students are expected to take part in outdoor sports.

12. A limited number of athletic contests is permitted with college organizations from without.

13. All athletic associations of the students are strictly forbidden to countenance anything that savors of professionalism.

14. All athletics are governed by a Faculty Board of Control which will be guided in its rulings by the regulations adopted by the Conference Colleges. The Vice-President of the University and six members of the Faculty will compose this Board, and reserve the right of a final decision on all questions concerning athletics. The Faculty Board will determine the amateur standing of the members of the athletic teams and apportion the finances. By this means indiscreet and unconsidered action of students will be checked.

### LECTURES AND CONCERTS

Each winter, eminent men are invited to lecture before the students. Among those who have addressed the University in the past few years may be noted four Apostolic Delegates: Cardinals Satolli and Martinelli, and Monsignors Falconio and Agius; Archbishops Ireland, Riordan, Keane, Glennon and Christie, and Bishops Spalding, Alerding, McQuaid, O'Gorman and Shanley. There were also such noted European churchmen as the Abbé Felix Klein and the foremost of living English historians, Dom Gasquet, besides men of letters like Marion Crawford, Maurice Francis Egan, Henry Van Dyke, Seumas MacManus, William Butler Yeats, James Jeffrey Roche, Hamilton Wright Mabie, Opie Read and Henry James, and such men of affairs as Senator Taft, ex-Senator Hill, Senator Beveridge, Attorney General Charles Jerome Bonaparte, Representative Adam Bede, William P. Breen and Bourke Cockran. Concerts are given frequently by organizations from without.

**EXPENSES.**

Matriculation Fee (payable on first entrance).....	\$ 10.00
BOARD, TUITION, Lodging, Washing, and mending of Linens, per session of nearly Ten Months.....	400.00

**PAYABLE IN ADVANCE, as follows:****On Entrance in September:**

Matriculation Fee (payable first year only).....	\$ 10.00
First Payment on Board and Tuition.....	250.00
Deposit on Book and Stationery Account.....	10.00
Special Lecture and Concert Course.....	3.00

Also, in this First Payment must be included any extra Expense the student may wish to incur, such as charges for Private Room, Special Courses (listed below).

**On January 15:**

Balance on Board and Tuition.....	\$150.00
and any extra expenses the student may have incurred.	

No rebate will be allowed for time absent at the opening of the Sessions, September and January. The charge of \$400.00 covers the tuition fee, which is fixed at \$100.00 per Scholastic Year. The latter sum is accepted as an entirety for tuition during the Scholastic Year, and will not be refunded in whole or in part if the student be dismissed for wilful infraction of the fundamental rules and regulations herein stated and hereby brought to his notice; and so likewise in the event of his leaving and absenting himself from the University at any time or for any cause without proper permission. However, an exception is made if it seems to be expedient for him to go to his home because of severe or protracted illness. *Degrees will not be conferred on any student whose account with the University has not been settled.*

**SPECIAL EXPENSES—PAYABLE IN ADVANCE:**

For whole Session of nearly Ten Months.

**PRIVATE ROOMS—**

Seniors, Juniors, and Sophomores, Free; Freshmen.....	\$50.00
Preparatory Students.....	\$80.00

While the students, as a rule, are advised to confine themselves to the regular studies of the course they have entered, any of the following may be taken at the rate mentioned per Scholastic Year. The charges will be *pro rata* for any portion of the year.

Instrumental Music—Lessons on Piano and use of Instrument.....	\$60.00	Use of each Instrument..	\$ 5.00
		Vocal Culture.....	40.00
		Elocution — Special Course.....	10.00
Use of Piano for Advanced Students.....	30.00	Use of Library.....	5.00
Telegraphy.....	25.00	“Scholastic”—College Paper.....	1.50
Typewriting—Full Course (20 Lessons) .....	5.00	Artistic Drawing.....	25.00
Phonography.....	25.00	Applied Electricity.....	40.00
Practical Mechanics.....	30.00	Special Lecture and Concert Course.....	3.00
Lessons on Violin, Guitar, Flute, Cornet, Clarinet or Mandolin.....	30.00	Gymnastics—Full Course (20 Lessons).....	5.00

Laboratory Fees Listed under Regular Courses.

#### GRADUATION FEE.

For all Courses leading to a Degree, \$10.00; Commercial Course, \$5.00.

#### REMARKS.

The Entrance Fees, cost of Books, Music and Laboratory Fees, etc., are required with first payment.

Remittance should be made by draft, post office money order or express, payable to the order of the President.

Checks on local banks are not desirable, and exchange will be charged in all cases.

Term bills and other accounts are subject to sight draft if not paid within ten days after they have been rendered.

*Sorin, Corby, Brownson and Carroll Halls are closed during the months of July and August. Students wishing to spend their Summer Vacation under the care of the University authorities can be accommodated at San Jose Park, Lawton, Michigan.*

In consequence of benefactions lately received by the University, a limited number of students aspiring to the ecclesiastical state can be received at special rates. Fuller information can be obtained by addressing the President.

## THE COLLEGE OF ARCHITECTURE

Architecture is, fundamentally, a fine art; but it is a fine art that may be expressed on so large a scale that a deep and comprehensive knowledge of engineering science is necessary to make its expression stable.

The Master-Architect is the heaven-gifted man who, having conceived his projects in ultimate beauty of form, color, texture, and ornament, can build them structurally and economically perfect. It is seldom that any mind combines all of these attributes. It is more seldom that to-day's practice requires them in any one man. To-day, one man "designs"; another "frames."

It is the recognition of these two almost independent phases of Architecture that has caused the University of Notre Dame to detach the Program in Architecture from the School of Engineering and to create the new College of Architecture.

The Faculty of the College now offer three undergraduate programs and two graduate programs to men able to furnish the entrance requirements. The *Beaux-Arts* Program requires four years for completion and is offered to students wishing to specialize in design: the degree of Bachelor of Science in Architecture is given at completion. The Engineering Program is of the same length and is offered to men wishing to specialize in construction: the degree is Bachelor of Science in Architectural Engineering. Graduate years are offered in both programs, and upon completion, Masters' degrees are conferred. A Short Program covering two years is offered to students finding it impossible or inexpedient to devote to school work the time required for completing

the programs leading to degrees. Upon completion of the Short Program a Certificate of Proficiency is given.

The general scheme of the courses provides for work in the draughting-room continuously during the morning hours from 8 to 12, and for periods of class-room work in the afternoon. In the Senior Years and in the Short Program the class-room requirements are less and the time to be spent in the draughting-room correspondingly lengthened.

Students matriculating for the Short Program or either of the complete programs must be at least eighteen years of age and must have completed the work preparatory to the programs either in the Preparatory School of the University or in another accredited school; or, entrance may be by examination, at the University on the first two days of the Fall Term or in Chicago at the Offices of the University on days announced in the press of that city.

Students may not matriculate with more than one condition, and any condition interfering with the routine of the courses must be worked off privately.

For students matriculating with advanced standing there must be a corresponding increase in the age-limit.

Students taking the work of either of the graduate years must have received their Bachelor degree in Architecture (or in Architectural Engineering) from Notre Dame or another School of Architecture of equal standing. The University will confer the Master's degree on her own graduate students not in residence at the end of one year if that time is spent in an *atelier* of the first order or in travel abroad following an approved program of study and investigation; or at the end of not less than two years if that time is spent in practice and the University's requirements are complied with.

**EQUIPMENT**

The equipment of the College of Architecture, from a small begining, is rapidly becoming more and more complete. There are a number of signed drawings—some from the *Ecole de Beaux-Arts*; others from architects of national reputation; photographs, engravings, plaster models, reference books and manufacturers' catalogues and samples. The collection, however, needs to be increased faster than the resources of the University will permit. Philanthropic friends of Notre Dame can not give money, or its equivalent, for a better purpose. The Endowment of a Traveling Fellowship, preferably for the study of European Ecclesiastical Architecture, will be a benefaction of the utmost value. One thousand dollars will provide for one man for one year.

**ENTRANCE REQUIREMENTS**

Candidates for the Freshman Year in either four-year program or for the First Year of the Short Program must be prepared to pass an examination in the branches named below, unless they have done their preparatory work at Notre Dame or at an accredited High School.

**ENGLISH**—Part of the examination time is given for answering questions upon books required to be read in the preparatory courses in English; the remainder for writing an essay.

**ALGEBRA**—Fundamental operations, simple equations, involution and evolution, radicals, radical equations and quadratic equations, including everything up to logarithms, as given in *Wentworth's College Algebra*, or of an equivalent in the larger treatises by other authors.

GEOMETRY—Plane and Solid.

TRIGONOMETRY—Plane and Spherical.

HISTORY—A general knowledge of the outlines of Greek and Roman History and of Medieval and Modern history, as set out in the texts used in the high schools and academies of the country.

GEOGRAPHY—Physical, as much as is contained in the ordinary text-books.

PHYSIOLOGY—*Martin's* Human Body, or an equivalent.

BOTANY—Elementary.

ZOOLOGY—Elementary,

CHEMISTRY—Elements of inorganic chemistry, as given in high schools of good standing.

PHYSICS—Elementary. The preparation on this subject should include a course of lectures illustrated by experiments, and recitations from a text book similar to *Carhart and Chute's* or *Gage's*. Laboratory work is recommended, but is not required.

CIVICS—Elementary.

GERMAN—A two year's course in German is required. Ability to translate at sight German into English, and easy English sentences into German.

FRENCH—An equivalent course in French may be offered for the German.

DRAWING—A knowledge of the use of drawing instruments, of elementary projection drawing and freehand.

The Program of Studies Preparatory to the Programs in Architecture is outlined and described in this Bulletin immediately following the description of the College work.

## THE BEAUX-ARTS PROGRAM

DEGREES: Bachelor of Science in Architecture.  
Master of Science in Architecture.

It has been the aim of the College in offering this program so to design it that the student pursuing it will have upon completion a liberal general education, a practical working knowledge of Construction, and a systematic and thorough training in Architectural Design and Composition. It may be undertaken by students whose artistic intuition and temperament fit them especially for the aesthetic side of a noble profession.

The course is built up around the work in the draughting-room and *atelier*, where half of the student's time is spent. The work in Design, beginning in the Freshman year with the intelligent study of the orders and simple problems involving their combination and use, and continued in the three following years by means of minor and major problems involving the planning of all classes of buildings from the simplest to the most monumental, is supplemented and rounded out by exercises in the various methods and media of rendering and by a thorough course in freehand and modelling. All instruction in planning and composing is based on correct principles of design.

The materials and methods of all trades and professions engaged in building operations are systematically studied in the Construction classes throughout the four years of the program. The writing of specifications for each branch of labor is studied synchronously. Practical work in the various trades is given so that the student

may know good work and thus be able to superintend construction intelligently. These practical lessons are supplemented by weekly inspection trips to the important building operations and industries in the neighborhood of the University.

The standard Hand-books and Mill-books are used as supplementary text-books.

Graphic methods of determining stresses in beams, girders and trusses of all forms are studied and numerous practical problems solved.

Working drawings and details of construction are made under office conditions.

Broadly speaking, it is the purpose of the College in outlining the Construction courses to equip the student to solve by *office methods* any problem he may meet in ordinary practice, it being taken for granted that graver problems requiring a deep knowledge of the higher mathematics may well be left to the Architectural Engineer.

In the last year of the program a series of lectures are given on Estimates, Contracts, Law, Business Relations, and Professional Ethics and Practice. Architects of high professional standing will give a number of the lectures in this course.

The History of Architecture and of the allied Arts is studied in a course covering three years. The method is a combination of lectures, recitation and research.

Courses in literature, economics and philosophy covering four years complete the curriculum.

In the Graduate Year advanced work in criticism and research is done and larger and more complicated problems are given in design.

## ENGINEERING PROGRAM

**DEGREES:** Bachelor of Science in Architectural Engineering.  
Master of Science in Architectural Engineering.

The science of engineering has long since outgrown the practical limit of one man's abilities. To be thorough, the engineer must specialize. One of his specializations is in Architecture. His services are needed to frame important buildings, to design their foundations and to protect adjoining property while they are in erection. The modern idea of education is to progress in a course parallel to the world's needs. The College offers the Program in Architectural Engineering because there is need of the services of the men who can complete it.

Students desiring to become Architectural Engineers should have a bent for mathematics and for painstaking exact draughting.

The program of studies differs from that of the *Baux-Arts* Program chiefly in that a course in pure and applied mathematics is substituted for the courses in English, economics and philosophy; a year in History of Construction for the one in History of Art; and in that a relatively greater amount of time, increasing each year, is spent in Construction Design.

The Graduate Year is spent entirely in the solving of problems of the first order in Architectural Engineering.

## THE SHORT PROGRAM

### Certificate of Proficiency.

The scheme of studies for the Short Program comprises most of the work of the complete program that is essentially architectural. A glance at the Program will show that there is relatively less class-room work and correspondingly more in Design each year than in either of the complete programs.

### SUMMER WORK

Summer, or Vacation Work, consisting of sketches, projects measured drawings or work in an Architect's office will be required of all students of Architecture.

### EXPLANATION OF "HOURS"

A class hour means one hour of recitation or lecture and one (average) hour of preparation. A freehand or design hour means two actual hours in the draughting-room.

It is the intention to have the student work steadily for four hours in the draughting-room during the morning session and to attend recitation periods in the afternoon session.

## BEAUX-ARTS PROGRAM

## FRESHMAN YEAR

SUBJECTS FIRST TERM	Hrs. a Week	SEE FOR DESCRIPTION		SUBJECTS SECOND TERM	Hrs. a Week	SEE FOR DESCRIPTION	
		Page	Course			Page	Course
English	3	29	I	English	3	29	I
Hist. of Arch.	2	37	I	Hist. of Arch.	2	37	II
Des. Geom.	3	32	I	Shades and Perspective }	3	32	I
Construction	2	35	I	Construction	2	35	I
Freehand	2	38	I	Freehand	2	38	I
El. of Arch.	8	40	I	El. of Arch.	8	40	I

## SOPHOMORE YEAR

English	3	29	II	English	3	29	II
Construction	2	35	II	Construction	2	35	II
Physics	3	34	II	Graphics	3	34	IV
Hist. of Arch.	2	37	III	Hist. of Arch.	2	38	IV
Freehand	2	38	I	Freehand	2	38	I, V
Pen-and-Ink	1	40	I	Modelling	3	39	V
Design	7	41	II	Water Color	1	40	II
				Design	7	41	II

## JUNIOR YEAR

Economics	4	30	I	Adv. Cons't	4	35	III
Adv. Cons.	4	35	III	Heat and Vent	2	36	VI
Sanitation	2	36	V	Electricity	1	36	VII
				Theory Design	1	41	V
Freehand	2	38	II	Freehand	4	38	II, III
				Modelling }	3	39	V
Design	8	41	III	Design	8	41	III

## SENIOR YEAR

Ethics	4	30	I	Sociology Business Re- lations and Professional Ethics	4	30	II
					2	37	I
History of Art	2	38	V	History of Art	1	38	V
Freehand	2	39	IV	Freehand	2	39	IV
Design	12	41	IV	Thesis Design	11	41	IV

## ENGINEERING PROGRAM

## FRESHMAN YEAR

SUBJECTS FIRST TERM	Hrs. a Week	SEE FOR DESCRIPTION		SUBJECTS SECOND TERM	Hrs. a Week	SEE FOR DESCRIPTION	
		Page	Course			Page	Course
Algebra	5	30	I	Anal. Geom.	5	31	II
Des. Geom.	3	32	I	Shades Shad- ows Persp't'e}	3	32	I
Construction	2	35	I	Construction	2	35	I
Freehand	2	38	I	Freehand	2	38	I
El. of Arch.	8	40	I	El. of Arch.	8	40	I

## SOPHOMORE YEAR

Calculus	.5	31	III	Calculus	5	31	IV, V
Construction	2	35	II	Construction	2	35	II
Physics	3	34	II	Graphics	3	34	IV
Freehand	2	38	I	Freehand	2	38	I
Pen-and-Ink	I	40	I	Water Color	I	40	II
Design	7	41	II	Design	7	41	II

## JUNIOR YEAR

Anal. Mech.	5	33	VIII	Anal. Mech.	2	33	VIII
Adv. Cons.	2	35	III	Mech's of Mat.	3	33	X
Sanitation	2	36	V	Adv. Cons.	2	35	III
Hist. of Arch.	2	37	I	Heat. & Vent.	2	36	VI
Freehand	I	38	II	Electricity	I	36	VII
Design	8	41	III	Hist. of Arch.	2	37	II
				Design	8	41	III

## SENIOR YEAR

Architectural Engineering	5	36	IV	Architectural Engineering	5	36	IV
Hist. of Arch.	2	37	III	Business Rela- tion Profes- sional Ethics	2	37	I
Freehand	I	39	III	Hist. of Arch.	2	38	VI
Structural Design	12	41	IV	Design-Thesis	11	41	IV

## SHORT PROGRAM

## FIRST YEAR

SUBJECTS FIRST TERM	Hrs. a Week	SEE FOR DESCRIPTION		SUBJECTS SECOND TERM	Hrs. a Week	SEE FOR DESCRIPTION	
		Page	Course			Page	Course
Descriptive Geometry	3	32	I	Shades and Shadows	3	32	I
Construction	2	35	I	Perspective			
History of Architecture	2	37	I	Construction	2	35	I
Freehand	2	38	I	History of Architecture	2	37	II
Elements of Architecture	II	40	I	Freehand	2	38	I, V
				Modelling		39	
				El. of Arch. Design	II	40	I
						41	II

## SECOND YEAR

Construction	2	35	II	Construction	2	35	II
Sanitation	2	36	V	Heating and Ventilation	2	36	VI
History of Architecture	2	37	III	Graph. Statics	3	34	IV
Physics	3	34	II	Electricity	1	36	I
Freehand	4	38	II	Theory Design	1	41	
Pen-and-Ink Design	1	40	I	Freehand	2	38	II
	6	41	II	Water Color Design	1	40	II
					8	41	II

## COURSES IN ENGLISH

## I.

(a) PROSE FORMS—Special treatment of Exposition and Argumentation. *Genung's* Working Principles of Rhetoric, Part II. Frequent practice in writing essays.

[One hour a week for two terms.]

(b) *Heydrick's* How to Study Literature, with practical exercises in analysis of literary forms.

[One hour a week for one term.]

(c) LITERATURE—*Higginson and Boynton's*. In this course the student acquires a good knowledge of the contents of American literature. The biography of men of letters is also a part of this course.

[One hour a week for two terms.]

(d) LYRIC POETRY—The technique is carefully laid down and choice specimens of lyric poetry are read critically in class. There is much required reading.

[One hour a week for one term.]

## II.

(a) PROSE FORMS—Special study of the Novel and the Short Story. The development of the novel is carefully studied, and its kinship with other forms of narrative is pointed out. Frequent practice in writing.

[One hour a week for one term.]

(b) LITERATURE—The development of English Literature is studied, minute attention being given to great periods.

[Two hours a week for one term.]

(c) THE SONNET—Technique and analysis of famous sonnets.

[One hour a week for one term.]

## COURSES IN POLITICAL SCIENCE

## I.

(a) THE ELEMENTS OF ECONOMICS, viz.:—Land, Human Exertions and Capital; Value, Money and Credit; Rent, Interest, Profit and Wages; and Population and Consumption.

[Four hours a week for one term.]

## II.

THE ELEMENTS OF SOCIOLOGY—Lectures, readings, and examinations on required texts.

[Four hours a week for one term.]

## COURSE IN PHILOSOPHY

## I.

(a) ETHICS—The theory of Morals, with special reference to practical problems.

[Four hours a week for one term.]

(b) OUTLINES OF THE HISTORY OF PHILOSOPHY—*Turner's* History of Philosophy.

[Four hours a week for one term.]

## COURSES IN PURE MATHEMATICS.

## I.

ALGEBRA—This course includes a study of the binomial theorem, the theory of logarithms, choice, chance, variables and limits, series, determinants. Then follows a thorough study of the general properties and solution of equations, embracing the subjects of derivatives, transformation, detached coefficients, surd and imaginary roots, incommensurable roots, limits of roots, biquadratic equations, Des Cartes' and Cardan's rules; Sturm's theorem; Horner's method; roots of complex number and trigonometric solution of cubic equations.

[Five hours a week for one term.]

## II.

**ANALYTIC GEOMETRY**—This course includes a study of the point and right line; conic sections, their equations and properties; discussion of the general equation of the second degree containing two variables; higher plane curves, equations of the third degree; different systems of coordinates; transformation of coordinates; spirals; an elementary course in geometry of three dimensions, embracing the point, straight line, plane, and surfaces of revolution; transformation of coordinates; quadric surfaces and supplementary propositions.

[ Five hours a week for one term. ]

## III.

**CALCULUS, DIFFERENTIAL**—This course as also course IV., is designed to meet the requirements of Engineering students. It includes a study of the methods for the differentiation of algebraic, logarithmic and exponential, trigonometric, and inverse trigonometric functions, successive differentiation, and differential coefficients; treatment of implicit and compound functions; expansion of functions; indeterminate forms; partial differential coefficients of the first order and of higher orders; direction of curvature; radius of curvature; envelopes; singular points of curves, maxima and minima of functions of one independent variable, and of several independent variables; tracing curves; differentials of arcs, plane areas surfaces and volumes of revolution.

[ Five hours a week for one term. ]

## IV.

**CALCULUS, INTEGRAL**—Integration of elementary forms and of rational fractions; integration by rationalization and by parts; successive integration; multiple integrals; definite integrals, limits of integration; double integration applied to plane areas; rectification of plane

curves; quadratures of plane areas and surfaces of revolution; surface and volume of any solid; intrinsic equation of a curve. This course is supplemented by numerous exercises and examples.

[Five hours a week for one term.]

## V.

**DIFFERENTIAL EQUATIONS**—An elementary course for engineering students, supplementary to the course of Integral Calculus. It embraces: equations of the first order and first degree; equations of the first order, but not of the first degree; singular solutions; linear equations with constant coefficients; special forms of equations with higher orders. Numerous applications to Mechanics and Physics are introduced during the course.

## COURSES IN APPLIED MATHEMATICS

### I.

(a) **DESCRIPTIVE GEOMETRY**—In this course are considered problems on the point, right line, and plane; single curved, and warped surfaces; problems relating to tangent planes, to single curved, double curved and warped surfaces; intersection of surfaces by planes; tangencies, development of surfaces. Numerous practical problems and exercises requiring the application of the principles of Descriptive Geometry, are added by the instructor.

[Three hours a week for one term.]

(b) **SHADES AND SHADOWS, PERSPECTIVE**—In this course the student is taught to cast conventional shades and shadows as they are used in architectural rendering, and to make perspective drawings by the most effective and rapid methods. Numerous practical problems are given in shades and shadows. For practice in perspec-

tive drawing students are required to make perspectives of all their projects and to sketch in perspective in their third and fourth years. The use of all the different *media* is required for rendering—charcoal, chalk, pencil, India ink in flat and graded washes, and water-color.

The instruction in perspective is practical rather than theoretical. All of the standard works are in the Reference Library. Students in classes of not less than five, so electing, may study theory exhaustively.

[Three hours a week for one term.]

## II.

**ANALYTIC MECHANICS**—The aim of this course is to prepare students of Engineering for the study of the courses of Applied Mechanics. The course comprises a study of the fundamental principles of Statics, Kinematics, and Kinetics. The subjects selected are studied with the object of thoroughly preparing the Engineering students to pursue the technical and practical branches of their respective courses. Some of the topics considered in this course are: work, energy, conservation of energy; power, composition and resolution of forces, center of gravity, center of mass, moment of inertia, acceleration, dynamics of rigid bodies, laws of friction, etc.

[Five hours a week for first term.]

[Two hours a week for second term.]

## III.

**MECHANICS OF MATERIALS**—This course is intended to meet the requirements of Engineering students and to prepare them by a study of the action and effect of forces on beams and structures, to design economically and intelligently the parts entering into a complete structure. The course comprises a study, according to

the latest and most approved methods, of tension and its effect on materials, compression, theories of flexure and rupture from transverse stress, shearing stress, transverse strength, beams of uniform resistance, various forms and loaded in any manner, design and strength of beams and columns, effect of long continued stresses, factor of safety and working stresses, strength of pipes and cylinders, theory and practice of riveting, torsion, transmission of power by shafts, continuous girders, equation of curves of deflection, theorem of three moments, moment at any support, resilience of the of materials, apparent stresses and true stresses, etc.

[Three hours a week for one term.]

#### IV.

**GRAPHIC STATICS**—In this course the student is taught to determine stresses by graphical methods. centers of gravity, moments of inertia, shear and bending moments of beams under all conditions of loading are determined by the application of the principles of the force and equilibrium polygons. Stresses in trusses and built up girders, in masonry arches and domed structures are determined graphically. Methods of determining appropriate sections are taught. Numerous practical problems are given.

[Five hours a week for one term.]

#### COURSE IN PHYSICS

##### I.

**GENERAL PHYSICS**—Mathematical principles are applied to physical phenomena. Special attention is paid to accuracy in the mathematical work and in the statements of the principles involved. Lectures and recitations.

**COURSES IN CONSTRUCTION****I. AND II.**

**CONSTRUCTION**—In these courses the student obtains a thorough knowledge of the materials and methods of the mason's, carpenter's, metal worker's and painter's trades. Each trade is considered separately, and at conclusion an exhaustive study of specification writing and methods of estimating for it is made. The University constantly furnishes employment to a large force of trained mechanics who will give personal lessons to the student in all branches of these trades. Inspection visits are made weekly, as a supplementary exercise in superintendence, to important building operations in the neighborhood. Detail drawings of constructive methods are made exactly as in an Architect's office.

In the spring terms of his last three years each student is required to stake out on the campus one of his projects and to furnish all levels required by the builder in order to acquire thoroughness in the use of the architect's level and compass.

[Two hours a week for four terms.]

**III.**

**ADVANCED CONSTRUCTION**—In this course the student studies the construction and design of steel framing, fireproofing of all forms, reinforced concrete, footings and foundations.

Working drawings for one of the student's projects are made. Especial care and accuracy are demanded in the preparation of the framing plans and details. This work is traced and blue-printed by Freshmen students.

[Two hours a week for two terms.]

## IV.

**ARCHITECTURAL ENGINEERING**—A course in which are solved graphically and analytically more complicated problems in structural design and applied mechanics, with especial study of reinforced concrete.

[Five hours a week for two terms.]

## V.

**SANITATION**—This study is taught from text-book and embraces sanitary engineering pertaining to buildings, as follows: sewerage, water supply, lighting and ventilation, plumbing work, subsoil drainage, dry foundation walls and cellars; also drawings of plumbing systems and fixtures.

[Two hours a week for one term.]

## VI.

**HEATING AND VENTILATION**—This course is a study of the theory and practice of heating and ventilating public buildings and dwelling houses. The different systems of heating,—furnace heating, hot water, steam, etc.,—are carefully examined and studied. The radiation of heat from surfaces, the different systems of piping, condition of air as to moisture, amount of air required, causes and best means adopted to secure pure air; the necessity of good ventilation and the latest approved methods for securing this all important feature are some of the topics considered in this study.

[Two hours a week for one term.]

## VII.

**ELECTRICITY**—A course of lectures and recitations, on the general theory of electricity and magnetism and its application to practical work, as follows: Setting up

and testing primary and secondary batteries, systems of call bells, electric and gas lighting appliances, fire and burglar alarms, telegraph and telephone lines, switchboards and accessories, arc and incandescent lighting systems, etc.

[One hour a week for one term.]

#### COURSE IN BUSINESS RELATIONS

This course consists of lectures in which are given descriptions of a system of book-keeping suited to the needs of an architect's business, a system of building accounts, filing system for catalogues and prints, a card-index system for prints and general information; of forms for agreements with clients, for proposals and acceptances, for contracts and bonds, and for certificates; and the laws affecting clients, contractors and architects; and the rules of professional ethics in private practice, competitions and municipal affairs.

[Two hours a week for one term.]

#### COURSES IN HISTORY

##### I, II AND III.

**HISTORY OF ARCHITECTURE** — This course comprises a study of the early beginnings, growth and development of architectural styles. It includes ethnography as applied to architectural art; Ancient Architecture; Egyptian Architecture; Assyrian Architecture; Grecian Architecture; Etruscan, Roman and Sassanian Architecture; Christian Architecture in France, Belgium and Holland, Germany, Scandinavia, England, Spain and Portugal, and Italy; Saracenic and Ancient American Architecture; Byzantine Architecture.

[Two hours a week for three terms.]

## IV.

**HISTORY OF ORNAMENT**—A study of the origin and evolution of ornament and the application of the same together with exercises in motive.

[Two hours a week for one term.]

## V.

**HISTORY OF ALLIED ARTS**—A brief study of the field of Art with especial reference to Sculpture, Metal Working, Mural Painting, Stained glass and Mosaic,

[Two hours a week for two terms.]

## VI.

**HISTORY OF CONSTRUCTION**—A critical study of the types of construction of the ancient, medieval and modern builders, tracing the relation of the type to the problem and the development of the style from the type.

[Two hours a week for two terms.]

**COURSES IN FREEHAND AND MODELLING****I AND II.**

(a) **ELEMENTARY FREEHAND**—Drawing from casts of ornaments purely geometrical, such as moldings, ovoloes, dentils, etc. Sketching from simple objects.

(b) Drawing from casts of ornaments of which the elements are living forms, such as ornamental leaves and flowers. Sketching from nature of leaves and flowers.

(c) Drawing from architectural elements, such as pedestals, bases, shafts, cornices, etc. Lectures on perspective, direction of the principal lines in relation to the horizon. Elementary notions on the five orders of architecture.

(d) Drawing from casts of the human figure: hands, feet, masks, etc. Architectural ornaments. Sketching from familiar objects.

[Two hours a week for four terms.]

### III.

(a) ANTIQUE CLASS—Drawing from the antique of heads and busts. Still life drawing. Sketches of landscapes from nature. Selection of a subject. Composition in landscape. Applications of perspective.

(b) Drawing from the antique, full figure. Occasional studies of the head from the living model. Sketching from the costumed model. Still life in water colors.

[Two hours a week for two terms.]

### IV.

LIFE CLASS—Drawing from life. Artistic anatomy. Anatomical studies from the collections of Science Hall.

[Two hours a week for two terms.]

### V.

MODELING—One entire week in the spring terms of the Sophomore, Junior and Senior years is devoted to modelling in clay. The objects modelled are architectural forms, copied from the cast or made from the student's drawings of his own work, as his progress and ability may warrant.

SKETCH CLASS—One hour a week. The students have themselves an organization, "The Crayon Club," the object of which is to sketch college scenes and to do illustrative work; these sketches are brought into class and criticized.

All students of the Courses in Architecture are required to attend the sessions of the sketch class.

**COURSES IN RENDERING****I.**

**PEN AND INK**-- Rendering drawings in pen and ink from studies by noted artists in this branch of art; followed by rendering from photographs and of original drawings.

**II.**

**WATER COLOR**— The rendering of water color drawings, including perspectives:—casting of shadows, color treatment of buildings, and handling of foreground and background.

[One hour a week for two terms.]

While the catalogued time for the Courses in Rendering is one hour a week for two terms, for better results the work will be given in two eighteen-hour periods (thirty-six actual hours) in each term.

Practice in rendering is continued throughout the entire length of the courses.

**COURSES IN DESIGN****I.**

**THE ELEMENTS OF ARCHITECTURE**— This course is a study of the Five Orders of Architecture and is given by lectures, recitations and drawing. The study embraces a thorough analysis of each order, in which the principal and distinguishing features of each are clearly shown and comparisons made. Also a study in detail of the forms and proportions characterizing each is made in the class room. Problems pertaining to the orders are given in the Drawing Room, and detail drawings and colorings made.

[Eight hours a week for two terms.]

## II., III. AND IV.

**DESIGN**—The study of problems in architectural design, embodying the subjects of composition and form. This course expands from Elementary Design (second year) to Advanced Design and Thesis Work (fourth year), and includes the handling of design in monumental structures, and its application to modern buildings, such as hospitals, theaters, municipal buildings, libraries, churches, etc.

The program for the second year requires the execution of nine minor, (one day), and nine major problems; that for the third year of nine minor and six major problems; that for the fourth year of four minor and three major problems and the thesis.

Students of the Engineering Program will be given Engineering problems exclusively beginning with the second term of the third year.

[Seven, eight and twelve hours a week,  
respectively, for three years.]

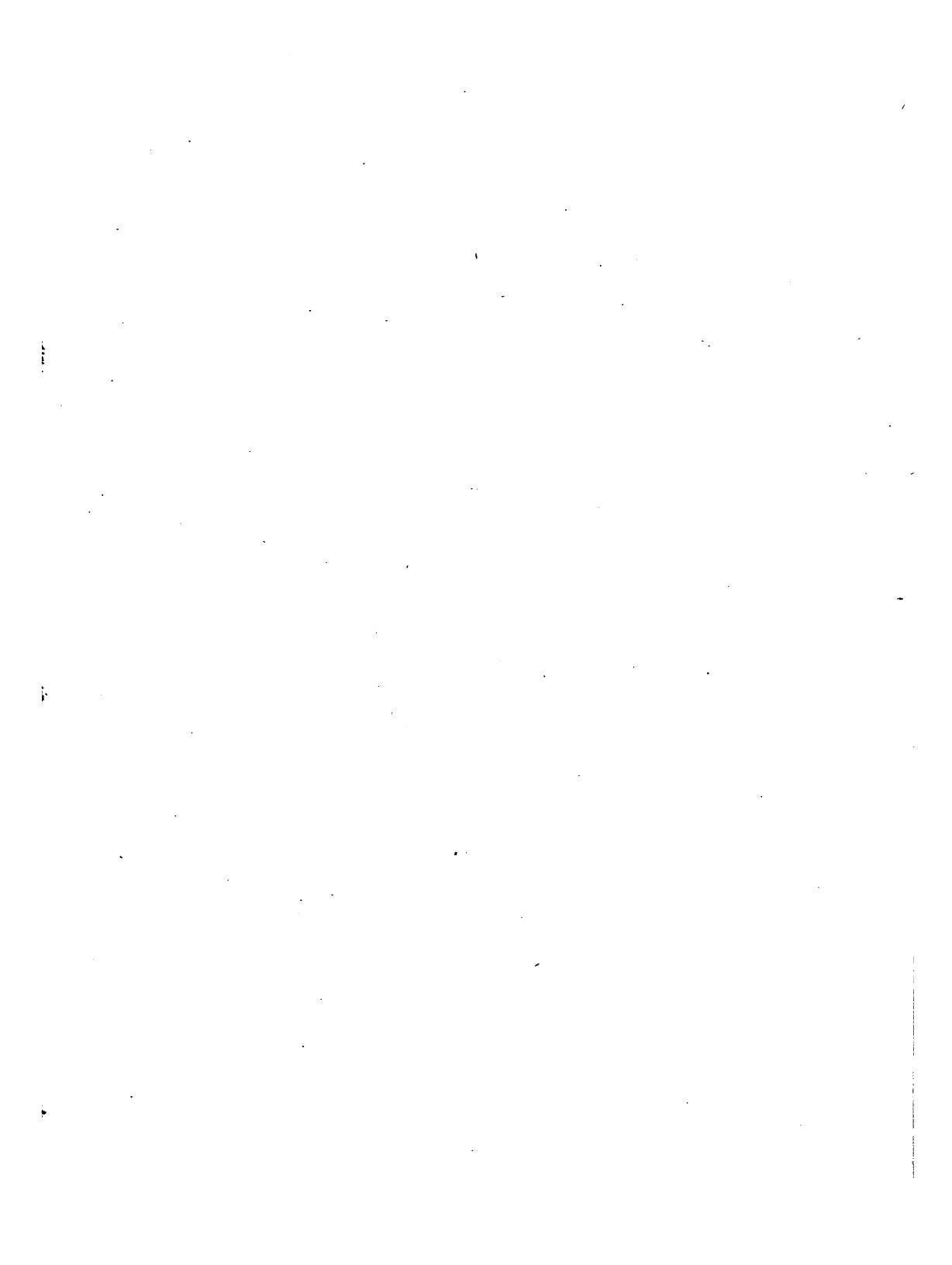
## V.

**THEORY OF DESIGN**—A thorough study of the principles of planning and proportion supplemented by study of the perfection and faults of the world's most famous buildings.

[One hour a week for two terms.]

**THESIS**—All of the time for design during the second term of the last year is devoted to the preparation of the graduating thesis. The subject in each case is selected by the Professor of Design or of Construction.

**PREPARATORY  
SCHOOL**



**INSTRUCTORS IN THE PREPARATORY  
SCHOOL**

**REV. MICHAEL A. QUINLAN, C. S. C.,**  
**ENGLISH AND MATHEMATICS.**

**REV. MATTHEW SCHUMACHER, C. S. C.,**  
**ENGLISH.**

**REV. TIMOTHY MURPHY, C. S. C.,**  
**CHRISTIAN DOCTRINE.**

**REV. GEORGE MARR, C. S. C.,**  
**MATHEMATICS.**

**WILLIAM L. BENITZ, M. E., E. E.,**  
**MATHEMATICS.**

**EDWARD J. MAURUS, M. S.,**  
**MATHEMATICS.**

**SHERMAN STEELE, LITT. B., LL. B.,**  
**CIVICS.**

**CHARLES PETERSEN, A. M.**  
**GERMAN.**

ALPHAEUS B. REYNOLDS, A. B.,

ENGLISH.

THOMAS J. DEHEY, A. B.,

FRENCH.

JOHN B. RENO, A. M., LL. B.,

ENGLISH.

JOHN WORDEN, B. S.,

DRAWING.

GALLITZEN A. FARABAUGH, A. B.,

HISTORY.

CLARENCE J. KENNEDY, B. S.,

PHYSIOLOGY, ZOOLOGY, BOTANY.

ARTHUR FUNK, B. S.,

CHEMISTRY AND PHYSICS.

WALTER B. HARRINGTON, PH. D.,

HISTORY.

FREDERICK W. McKINLEY, A. B.,

MATHEMATICS.

FRANK McGUANE, B. S.,

MATHEMATICS.

**PREPARATORY SCHOOL**

The University maintains a fully equipped Preparatory School under the same general government as the Colleges, but having its own special corps of instructors. The schedules of studies are arranged to meet the need of thorough preparation for collegiate work, and embrace courses which, while giving as wide an education as can be obtained in the very best High Schools, prepare students directly for the group of studies they may elect when entering the Freshman year. Five different programs of instruction are offered to students, each containing such special courses as directly meet the needs of the fifteen college groups, while all embrace common subjects which are indispensably necessary in acquiring a fairly liberal education. The period of instruction covers four years.

The equipment and facilities for study in the Preparatory School are most complete. The laboratories are extensive and fully supplied with the latest improved appliances. The classes pursuing any subject are divided into sections, each containing a limited number of students. The sections are purposely limited in order that each student may receive close attention from the instructor in every recitation and laboratory period.

Examinations for admission are held at the opening of the School in September and embrace the subjects completed in the highest grade in the Grammar School. The expense for tuition, board, laundry, etc., will be found on pages 17 and 18. The following fees are special to the Preparatory School;

**LABORATORY FEES**

Science C.—Elementary Botany.....	\$2.50
Science D.—Elementary Zoölogy.....	2.50
Science E.—Elementary Chemistry .....	5.00
Science F.—Elementary Physics.....	5.00

PROGRAM OF STUDIES PREPARATORY TO THE  
 PROGRAMS IN THE COLLEGE OF  
 ARCHITECTURE

## FIRST YEAR

SUBJECTS FIRST TERM	Hrs. a Week	COURSE	SUBJECTS FIRST TERM	Hrs. a Week	COURSE
English	5	A	English	5	A
Mathematics	5	A	Mathematics	5	B
History	3	A	History	3	A
Science	5	A	Science	5	D
Civil Gov'm't	2	A	Civil Gov'm't	2	A

## SECOND YEAR

English	5	B	English	5	B
Mathematics	5	C	Mathematics	5	D
History	3	B	History	3	B
Science	5	B	Science	5	C
German	5	A	German	5	A

## THIRD YEAR

English	5	C	English	5	C
Mathematics	5	E	Mathematics	5	F
History	3	C	History	3	C
Science	5	E	Science	5	E
German	3	B	German	3	B

## FOURTH YEAR

English	5	D	English	5	D
Mathematics	5	G	Mathematics	5	H
Drawing	6	A & B	Drawing	6	C
Science	5	F	Science	5	F

French may be substituted for German in the 3rd and 4th years.

## COURSES IN ENGLISH

## A.

(a) *Meiklejohn's* Art of Writing English, with daily exercises in class. Two themes a week.

(b) The elements of versification. Scansion, one hour a week. Weekly exercises in writing verse. Memory work.

(c) Required reading: Robinson Crusoe, \*Evangeline, Treasure Island, Snow-Bound, \*The Sketch Book, \*The Vision of Sir Launfal, *Poe's* Tales, *Poe's* Poems, \*Julius Caesar, \*The Merchant of Venice.

(The works marked with an asterisk are to be studied; the others read.)

[Five hours a week for two terms.]

## B.

(a) *Hill's* Principles of Rhetoric. Part I., with daily exercises in class. Two themes a week.

(b) The simpler verse-forms. Weekly exercises. Memory work.

(c) Required reading: Ivanhoe, \*The Lady of the Lake, \*The Vicar of Wakefield, \*The Ancient Mariner, The Courtship of Miles Standish, \*Silas Marner, \*The Princess, \*Macbeth, \*As You Like It.

(The works marked with an asterisk are to be studied; the others read.)

[Five hours a week for two terms.]

## C.

(a) *Hill's* Principles of Rhetoric, Part II., with daily exercises in class. Weekly theme first term; fortnightly essay second term.

(b) Verse-forms continued. Weekly exercises. Memory work.

(c) Required reading: \*Sir Roger de Coverly, \**Macaulay's* Essay on Addison, \*The Golden Treasury of English Lyrics, \**Macaulay's* Essay on Milton, \**Milton's* Minor Poems, \*A Midsummer Night's Dream, \**Burke's* Speech on the Conciliation of America, \**Webster's* Bunker Hill Oration, \**Lincoln's* Gettysburg Oration, \*King Lear.

(The works marked with an asterisk are to be studied; the others read.)

[Five hours a week for two terms.]

#### D.

(a) *Genung's* The Working Principles of Rhetoric, Part I., with daily exercises in class. Fortnightly essay first term; monthly essay second term.

(b) Verse-forms concluded. Weekly exercises. Memory work.

(c) Required reading: The House of the Seven Gables, \*The Idyll's of the King, Selections from Paradise Lost, *Cary's* Dante, \**Gates'* Selection from Newman, \*The Dream of Gerontius, *Pope's* Homer, \*The Tempest, *Aubrey de Vere's* Poems, \*Hamlet.

(The works marked with an asterisk are to be studied; the others read)

[Five hours a week for two terms.]

### COURSES IN MATHEMATICS

#### A.

**ALGEBRA**—This course for beginners in Algebra includes a study of the primary fundamental principles necessary to the courses which follow. The subjects dwelt upon in particular are Factoring, Highest Common Factor and Least Common Multiple, which are afterwards applied in their relation to Fractions and the reduction of Complex Fractions. In as far as possible, concrete

examples of their applications to kindred scientific subjects are applied by the teacher.

[Five hours a week for one term.]

B.

**ALGEBRA**—In this course the study of Equations is begun and continued through equations of the first degree. Fractional Equations, Systems of Simultaneous Equations, Involution, Evolution, Radicals and Exponents complete the course which is supplemented wherever possible with problems of practical application.

[Five hours a week for one term.]

C.

**ALGEBRA**—This course begins with Quadratic Equations, Pure and Affected, followed by Systems of Simultaneous Quadratic Equations and those forms of Radical Equations of Higher Degree which may be solved by quadratic methods. Ratio and Proportion, Indeterminate Equations, Surds, Imaginaries, Inequalities, the Progressions and the Binomial Theorem finish the work in this course. As in the preceding courses, special stress is placed upon the application of the theory to such examples as will show its application to elementary scientific subjects.

[Five hours a week for one term.]

D.

**GEOMETRY**—This subject is completed as far as the end of Plane Geometry and includes a study of the theorems with proofs of exercises and original propositions. The habit of independent thinking is cultivated to some extent by the solution of special problems of concrete nature intended to exhibit the relation of the process studied to practical examples.

[Five hours a week for one term.]

## E.

**GEOMETRY**—The study of Solid Geometry is taken up in this term, the course being an extension of that of the preceding term. Planes, Solid Angles, Polyhedrons, the Cylinder Cone and Sphere are all studied in detail and the solution of original exercises and propositions of application is made a feature of the course.

[Five hours a week for one term.]

## F.

**ALGEBRA AND GEOMETRY**—This course which continues through one scholastic year is designed especially for those students who wish to take up the study of Engineering. As this necessitates a thorough ground work in mathematics, the first half of the year is given to a review of Algebra and Geometry, three hours and two hours per week respectively. The most important theorems and subjects are again studied and a more comprehensive view of the subject is attained in the generalizing of many theorems and extending the range of others.

[Five hours a week for one term.]

## G.

**ALGEBRA AND GEOMETRY**—The work of this term is entirely given up to an elementary exposition of the application of mathematics to scientific problems and to analysis. In lectures and class work actual problems representing existing and practical conditions will be taken up, and the derivation of approximate formulae and an elementary study of curves derived from experiment are included.

[Five hours a week for one term.]

## H.

**TRIGONOMETRY**—A half year is given to this subject which includes both Plane and Spherical Trigonometry. The work done is the equivalent of that in most of the elementary text-books. Special attention is given to Goniometry on account of its application to Calculus, and examples of a concrete nature are abundantly supplied.

[Five hours a week for one term.]

## COURSES IN HISTORY

## A.

**ANCIENT HISTORY**—*Meyers' "Ancient History"*  
The Eastern Nations. The History of Greece and of the Empire of Alexander. The Story of Rome. The Establishment of the Empire, and the rise of Christianity. The Romano-German or Transition Age.

[Three hours a week for one year.]

## B.

**MEDIEVAL HISTORY**—*Meyers' "Medieval History."*  
The Barbarians and their Kingdoms. Mohammedanism and the Saracen Caliphs. The Holy Roman Empire. The Age of Revival. The Empire and the Papacy. The Great Schism and the rise of the Nations of Modern Europe.

[Three hours a week for one year.]

## C.

**MODERN HISTORY**—*Fisher's "Outlines of History."*  
The Renaissance. The Age of Discovery. The Protestant Reformation. The Power of Spain. The Strifes of France with Spain and Germany. The Age of Louis XVI., and the rise of Russia. The Spanish and Austrian Successions. The Empire of England. The American Revolution. The French Revolution and the

Wars of Napoleon. The Revolutions and the Spirit of Nationality. The formation of Germany and Italy.

[Three hours a week for one year.]

#### COURSES IN SCIENCE.

##### A.

**PHYSICAL GEOGRAPHY**—An introductory and elementary study of the earth and its environments. The student will be led into a closer sympathy with the world about him. The various types of plant and animal life together with topographical and climatic conditions will be considered.

[Five hours a week for one term.]

##### B.

**PHYSIOLOGY**—Lectures, recitations and demonstrations with the stereopticon. The study of the human skeleton including the physiology and hygiene of the bones. The action, relation, structure and hygiene of muscles. The digestive, circulatory and excretory systems demonstrated by models and charts. The anatomy and structure of the nervous system and simple experiments on the same.

[Five hours a week for one term.]

##### C.

**BOTANY**—This course is designed for beginners in this subject; it includes a study of the higher plants with reference to structure of root, stem, leaf, flower and seed. An introduction to the lower forms of plant life and their classification is also given.

[Five hours a week for one term.]

##### D.

**ZOOLOGY**—This course includes an introduction to the subject with studies of representative forms and

their classification in the different groups of the animal kingdom. The subject is taught by recitations and laboratory work.

[Five hours a week for one term.]

E.

(a) ELEMENTARY CHEMISTRY—An introductory course of experimental lectures on familiar subjects such as water, the air and its constituents, common salt, etc., leading up to discussions of the more important elements and their properties, and the fundamental laws and phenomena of chemistry.

[Three hours a week for one year]

(b) EXPERIMENTAL CHEMISTRY—A laboratory course to accompany Course (a). A series of exercises to be performed by each student, and having as their main object the cultivation of the student's powers of observation and faculty of inductive reasoning. These exercises comprise a study of the principal metallic elements, including their preparation, properties and more familiar compounds. The directions for each experiment are made as brief as possible, the observation of facts and the drawing of correct conclusions therefrom being left, so far as the nature of the experiment will permit, to the pupil.

[Two hours (four hours of actual work) each week for one year.]

F.

ELEMENTARY PHYSICS—Instruction in elementary physics is given by lectures and recitations in which the general laws of mechanics, heat, acoustics, optics, electricity and magnetism are presented. The course is intended to meet the needs of those who desire a general knowledge of the subject as well as to lay the founda-

tions for advanced work. Particular attention is paid to the correct statement of principles so that in his advanced work the student will have nothing to unlearn or relearn.

[Three hours a week for one year.]

THE LABORATORY WORK of this course consists of a series of experiments which verify and apply practically the fundamental principles of physics. The student also receives instruction in the use and careful handling of apparatus, accurate observation, and correct deduction of results. Neat and concise reports of all experiments are kept by each student and form the basis for the grades in this work.

[Two hours (four hours of actual work) each week for one year.]

#### COURSE IN CIVIL GOVERNMENT

##### A.

This is a study of the science of government in connection with American institutions, and is intended to give the student some knowledge of the general principles of government and of the American Constitution. The subject begins by defining government; then is considered the object and necessity of government; origin of civil society; the principle of suffrage; different forms of government defined and compared; theories of representation. These topics necessarily are treated briefly, as the principal part of the course consists of a study of the Colonial government, the Articles of Confederation and their defects, the formation of the Constitution and its adoption. The study further comprises a critical analysis of each article and section of the American Constitution, thus enabling the student to acquire a clear

conception of the division of powers of the National Government and the duties and responsibilities of each department.

[Two hours a week for one year.]

#### COURSES IN GERMAN

##### A.

GRAMMAR—*Joynes-Meissner*, Part I. Translation from German into English of simple prose; translation of English exercises into German. Reading of short stories and selections from more difficult prose.

German Reader, *Miller and Wenkelbach*.

[Five hours a week for two terms.]

##### B.

GRAMMAR—*Joynes-Meissner*, Part II. Translation into German of narrative prose and selections from history. Sight reading of selections from history.

Herman and Dorethea, *Goethe*; Lichtenstein, *Hauff*.

[Three hours a week for two terms.]

#### COURSES IN FRENCH

##### A.

Grammar with written and oral exercises; the inflection of nouns and adjectives, the use of all the pronouns, the conjugation of regular and the common irregular verbs; the correct use of moods and tenses, the essentials of French syntax, and the common idiomatic phrases. Reading three of the following: *Houghton's French* by Reading; *La Tâche du Petit Pierre*, *Mairet*; *Un Cas de Conscience*, *Gervais*; *La Main Malheureuse*, *Guerber*; *Sans Famille*, *Malot*; *Supers' Readings from French History*.

[Five hours a week for two terms.]

## B.

Advanced Grammar and Composition, study of idioms, memorizing. Dictations and conversations are added on practical topics, and careful translation made of two or three of the following works: *Le Voyage de M. Perrichon*, *Labiche*; *Roman d'un Jeune Homme Pauvre*, *Feuillet*; *Fables choisies*, *La Fontaine*; *Le Médecin Malgré Lui*, *Molière*; *Le Cid*, *Corneille*; *Esther*, *Racine*; *Pages oubliées de Chateaubriand*; *La Question d' Argent*, *Dumas*; Standard French Authors, *Guerlac*.

[Three hours a week for two terms.]

## COURSES IN DRAWING

## A. AND B.

This work is based on the rudiments of drawing and consists of the training necessary for the hand and the eye. Sketching is also done from simple objects of various forms.

Advanced work in sketching from objects such as the plaster cast of flowers and suitable ornaments which afford the study of light and shade.

[Six hours a week for one term.]

## C.

This work embraces the principles of projection, methods of shop-drawing, tinting, tracing, blue-printing, line-shading and the preparation of working drawings of complete machines.

[Six hours a week for one term.]

## NEEDS OF THE UNIVERSITY

Visitors to Notre Dame judge from the appearance of the buildings and grounds that the University has no need of money. It is, nevertheless, absolutely without endowment, and its work is seriously hampered because it has no resources except the fees of students. There are *two scholarships* and the interest from these foundations is used in educating and boarding two students.

There were in 1901 1,452 Catholic students in 6 per centum of the non-Catholic colleges of America, and very many of these will lose their faith, and all will be weakened in that faith, because our people look upon collegiate institutions as the property of private corporations which are to be left to take care of themselves.

Notre Dame asks for scholarships for boys who can not pay the expense of education, and who, therefore, are obliged to go to non-Catholic colleges to the detriment of their faith. A foundation of \$8,000 will educate and board a student as long as the University exists. As one bursar is graduated another can take his place. The founder of the scholarship, of course, always has the privilege of appointing the student.

*Foundations for Scholarships are a very pressing need.*

We lack money for a library building, and for two more dwelling halls like Sorin Hall.

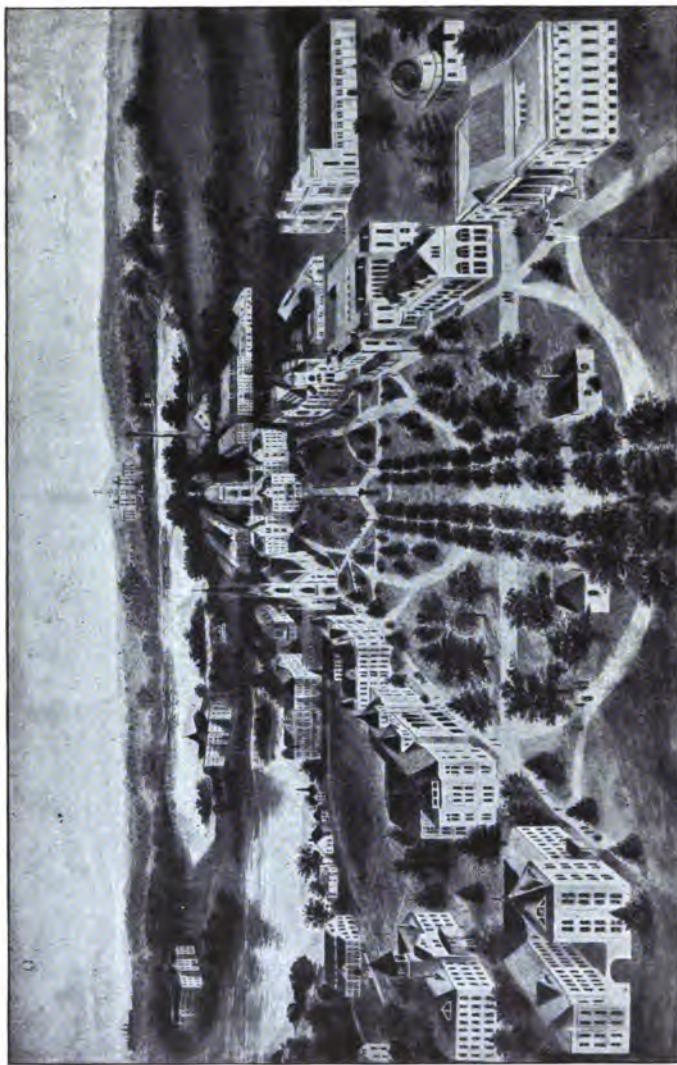
There is no Library Fund for the purchase of new books.

The names of the benefactors will be given to all foundations.

**BEQUESTS SHOULD BE MADE IN THIS FORM:**

*UNIVERSITY OF NOTRE DAME DU LAC*

I give, devise, and bequeath to the *UNIVERSITY OF NOTRE DAME DU LAC*, an institution incorporated under the laws of the State of Indiana, and located at Notre Dame, Indiana.....



BIRD'S-EYE VIEW OF UNIVERSITY OF NOTRE DAME.

